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ABSTRACT

Intended to provide journalism students with an introduction to electronic information retrieval, this guide outlines a few of the 500 online services available to them on the University of Missouri-Columbia campus. The concept of the quality versus the quantity of citations retrieved is introduced and emphasized throughout. Services available at Ellis Library are described and two vehicles of information exchange--online services and CD-ROM--are explained. Several reasons for journalism students to utilize database searching are mentioned, including: developing leads; getting background information for interviews; fact-checking after interviews; obtaining additional information; and analyzing trends. Users are advised on: (1) three different ways to search for information, i.e., the pros and cons of grazing, browsing and hunting; (2) designing a search statement (3) using key words; (4) using proximity and Boolean operators; (5) limiting search fields; and (6) interactivity. Appendices include information about when and how to decide whether to conduct a computer or a manual search; a sample search; and a table comparing five of Ellis Library's online and CD-ROM databases. (SD)

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Database Searching for the Service Journalist:
Some Theories and Mechanics

An Introduction

by Dan Wendling
Summer 1989

IR053051

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LitQuest After Dark Databases

Arts/Humanities
Artbibliographies Modern
Art Literature Intl. (RILA)
Business & Finance
Arts & Humanities Search
Arts and Humanities Search Practice Database

Historical Abstracts

Law
Legal Resource Index

Life Science
BIOSIS Previews, 1970-date
BIOSIS Previews, 1978-date
...1977
...iences
...e
...ics
...e
...nation Database
...al Practice
...ext
...inistration
...tical Abstracts
...Vomen
... Database
...tracts
...xt
...ation Fulltext
...Administration
Clinical Abstracts
Nursing and Allied Health
Medical and Psychological Previews

Psychology
Mental Measurements
Psycalert
PsycInfo
Mental Health Abstracts

Reference
Academic American Encyclopedia
ACS Directory opf Graduate Research
Books In Print
Dissertation Abstracts
Index to U.S. Government Publications
Knowledge Industry Publications
Magazine Index
Monthly Catalog of U.S. Gov't Publications
National College Databank
The National Newspaper Index
Newsearch (DALY)
OCLC EASI Reference
Popular Magazine Review
National College Databank
Onterio Education Resource Info. Database
Int'l Review of Publications in Sociology
Public Affairs
GPO Publications Reference File
NewsSearch
National Newspaper Index
Academic American Encyclopedia
Marquis Who's Who
Magill's Survey of Cinema
Dissertation Abstracts Online
Consumer Reports

Religion
Religion Index
Bible (King James Version)

Science & Technology
Current Cont.: Engineering, Tech. & Applied Sci.
Engineering Literature Index

Sociology
Sociological Abstracts

Sports
Sport Database
SPORT

Business
ABI/Inform
ABI/Inform Practice
Abstracts of Working Papers in Economics
Corporate and Industry Research Reports Index
Disclosure Databases
Investors Daily
Management Contents (1984-date)
Management Contents Backfile (1974-1984)
Trade and Industry Index
Harvard Business Review
Business Software Database

Computers
The Computer Database
Online Microcomp. Software G.&DIR
.MENU, The INT. Software Database
Microcomputer Index
The Computer Database
Micro...Guide

Education
ERIC (Ed. Resource Information Ctr.)
Educational Testing Service Test Collection
Exceptional Child Education Resources
Resources in Vocational Education
Vocational Education Curriculum Materials

Education
Peterson's College Database
GradLine

History
America: History and Life

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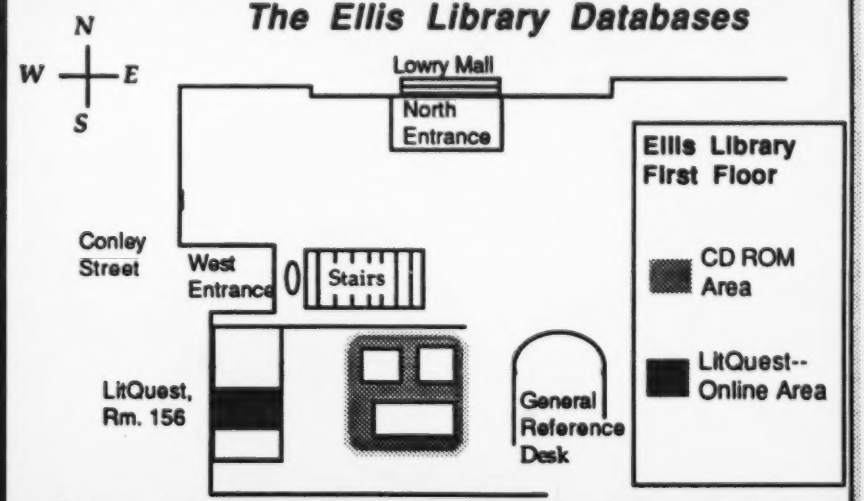
The Ellis Library Databases



Computer databases are useful research tools in many subject areas. When you type in a word or two, the computer shows you "records" or "citations" that include the word(s) you typed. The records are most often for magazine or journal articles, but may also be for newspaper articles, books, conference papers, speeches, research reports, dissertations. The CD ROM databases are free to University of Missouri faculty, staff and students.

Introduction

Perhaps a better title for this piece would be "How to Find Information for Your Service Journalism Articles." The "How to" would fit, since this is itself a service journalism article, designed as an action plan, for immediate use by the reader. After considering such a straightforward title, I decided I couldn't cover that much ground. Therefore, the horrible name I've chosen limits the subject to something I can relate in a few pages.

My attempt outlines the commercial online database industry and a few of the services available here on campus. There are over 500 databases available to journalism students at the University of Missouri-Columbia. The ERIC database, from the Educational Resource Information Center, has two important qualities that make it an important part of our discussion: 1) It has a lot of useful information, and 2) University students can use it free. A glimpse at the infrastructure of one database should give you an idea of what they're capable of, and in the future you can apply this knowledge to other databases.

Those of you already familiar with databases will notice that I've left out specific computer commands, for example how to tell the computer to print references, etc. There are three reasons for this. First, operating commands vary from system to system, and including them here would be very tedious for both reader and writer. Second, if you perform the search yourself, you'll probably find the commands posted on a nearby wall or on a handout near the computer site; you won't have to memorize them, just look for them when you need them. Third, you may not need to know them at all, since your first searches will probably be guided by a librarian or other information specialist. He or she will have a working knowledge of all necessary commands. (See Endnote 1) The bottem line is that this guide will not give you everything you need to know to sit down at a computer and search like a pro. The pros do a lot of homework. But it will give you enough information to use ERIC on CD ROM at Ellis Library.

What I hope you will gain from this guide is not a blow-by-blow description of searching. In my nine months of working with the Ellis computers I've seen that people can pick that up when they're at the computer (where many of the operating commands are on the screen).

Let's focus on the *quality* of information you can receive from database searching. Many patrons tell me they need *an* article to finish (actually, to start) the paper that's due tomorrow. It doesn't matter the quality of the article, they just want an article. And that's easy to get. In the information age, achieving *quantity* is not the issue. *Quality* is the trick--the journalist needs to fish a few quality ideas out of an ocean of literally millions of potential sources. A person groping for quantity is headed for what Alvin Toffler, author of *Future Shock* and *The Third Wave*, calls "Information Overload." If you're working on Dialog Information Service or Nexis, you'll have no trouble finding an article on your subject. Finding one that's exactly on target is the key.

I came to this opinion from several different directions. The first was my education here at MU in writing, marketing and advertising, where I learned to focus on the market. Secondly, I read *Magister Ludi: The Glass Bead Game*, by Herman Hesse, and I began to ponder the uses, if any, of knowledge to society. Deciding that it does have uses, I was then ready to explore with several people ideas presented in *Planning For Innovation Through Dissemination and Utilization of Knowledge*, by Ronald G. Havelock.

Be warned that this is not a manual of all the services of Ellis Library, and the service I describe is not the only use of the library. My exposure to library patrons and fellow journalism students leads me to believe that the main library on campus is not widely consulted by journalism students, but I will not attempt to persuade you to use the library's other services (although you ought to!). The many excellent ways to find information without computer searching are not covered here.

Although many other computer services are useful to journalists, such as electronic mail, J-Net, Ellis Library's LUMIN online card catalog and the university mainframe, they likewise are not included. I will describe only commercial information retrieval databases. The examples I give are from ERIC on CD ROM, which was manufactured by Silverplatter.

Lastly, my thanks to Professor Byron Scott, Dr. Robert Kahan and Dr. Joe Barnes, who have offered encouragement in my understanding of knowledge and its uses, and to Scott Christianson, for taking time out of his schedule much too often to help me figure out intricacies of MacIntosh publishing.

Comments should be sent to Dan Wendling, care of LitQuest, Room 156 Ellis Library, UMC, 65211, or to me by way of Professor Byron Scott, 1 Neff Hall in the Journalism School.

Information Retrieval:

What's available

Two vehicles of this information exchange, online and CD ROM, may fall into your lap (figuratively or literally) in the next few years.

You're working on a service journalism story: how to pick the right day care center. Where do you start? Who do you talk to? And what do you talk to them about? How will you answer the ever-more-urgent question in the reader's mind: "Why should I care?"

You'll stare at your keyboard or paper, maybe use the morgue, talk to friends, talk to parents whose children are in day care and to day care operators. The traditional way of getting information is to "work the streets," to talk to people, and that will always be a necessary part of journalism. But there's another tool you can use to write a better story--database searching. Using computers for what's known as inform-ation retrieval started in the 1950s (2), and new developments have continued to make it easier and cheaper to use.

Many potential sources for your article, no matter what the subject, have already been published and cataloged. This plethora of information, culled from thousands of magazines, professional journals, reports, encyclopedias, books, speeches and virtually any other source you can imagine, is stored in computer memory, from which you can extract the records you need by typing a few words on a computer keyboard.

Record is an umbrella term for an article, a speech, dissertation--and databases have thousands of them. Some databases have millions of them. If this piece were in a database, it would be one record. Each record usually has the title of the piece, publication information, terms designed to aid searchers, and a summary of the piece. Most databases are *bibliographic* in that they don't have the whole piece. Databases that have the whole piece are called *full text* databases. A record without a summary is usually called a citation.

Most databases are an attempt to catalog the sum of knowledge of an entire field, be it business, literature, education, chemistry, medicine, etc. (3) Biosis Previews, a life sciences database, contains around five million records.

Other databases may cross the boundaries of one specific field, for example Magazine Index, which has nearly two million records, with coverage of over 400 magazines, including the full text of over 80 magazines. (Many other databases can be found on the contents page of this guide.)

Types of information listed in databases

- Hard, factual data--research reports, technical studies, mathematical and statistical data
- Articles designed to instruct or entertain or both. Most popular magazines, most scholarly journals, most major newspapers
- Academic papers
- Articles that compare previous research and draw conclusions
- Product reviews

Figure 1

These services are localizing the information age by freeing you from an orbit around local sources. You've probably heard the term "the information revolution," which seems to have followed two other important stages in our history, the agricultural revolution and the industrial revolution. Technological developments are leading us toward a world economy where exchange of data of all types is increasingly necessary to function. Two vehicles of this information exchange, online searching and CD ROM searching, may fall into your lap, figuratively or literally, in the next few years. As a result, your future editors may reward you for fluency in information retrieval. Let's get started.

ONLINE

You can "go online" with most computers, provided they have the proper software, and a modem, a device that allows the signal, in this case words printed on the computer screen, to travel over telephone lines.

With this equipment you can reach information retrieval companies, called database vendors. These vendors, like Dialog Information Services, Inc. (one of the largest), Vu/Text, Nexis/Lexis, BRS, WilsonLine and ORBIT, usually charge a monthly fee and an hourly rate for the information they sell.

The Knight-Ridder news organization is affiliated with both Dialog and Vu-Text (4). Dialog offers over 200 databases, and according to the book Databasics: Your Guide to Online Business Information, Dialog has over 100 million records. (5) Vu-Text has the full text of approximately 50 newspapers and magazines. Mead Data Central's Nexis has the full text of over 160 newspapers, wire services, magazines and journals, as well as other types of information. Business is a primary focus.

Searching large systems such as these requires specialized training. Because of this and the cost of using them, which can be between $.40 and $1.50 or higher a minute (and usually a monthly subscription fee), information specialists often perform the searches.

Smaller database services, like Dialog's Knowledge Index and BRS/After Dark are less complex and less expensive. They have around 80 databases each and can be used for around 50 cents per minute.

Still less complex and less expensive, services like CompuServe Consumer Information Service, Inc. have *gateways* to the above vendors, but offer other services as well, such as purchasing travel tickets, news/weather/sports, support groups for professions and hobbies, and general information. Users can "talk" with each other in typed conversations, and leave messages with *electronic mail*. Dow Jones News/Retrieval, from Dow Jones and Company, Inc., publisher of the *Wall Street Journal*

CD ROM discs are similar to the CDs that hold the latest from the Fine Young Cannibals, except they hold information, about 250,000 pages.

and *Baron's*, provides the full text of the *Wall Street Journal*, company and financial information. These services have a lot to offer, especially if you have a home computer.

Of all these services, what's available on campus? Of interest to journalists are the following: from the Law Library, Nexis, searched by law librarian. Current cost: $4.50 per minute. (for tracking companies, Lexis, a legal database, is very good. Contact Jo Ann Humphreys. From Ellis Library: Dialog, WilsonLine, Orbit, BRS, STN's Chemical Abstracts are of most interest to journalists, searched by librarians. Current cost: varies with database, contact the Ellis Reference Desk. Also from Ellis Library: Knowledge Index, BRS/After Dark, searched by you, the patron. Current cost: $2.50 per each five-minute block. Chemical Abstracts $.40 per minute plus printing charges. Contact General Reference Desk. From the Journalism Library: Dialog and BRS, searched by librarian, for graduate students, faculty and staff. Free with the journalism graduate Dean's approval. Contact Rhonda Glazier at the library. From the *Missourian* morgue: Vu/Text, Dow Jones and CompuServe, searched by Bob Stevens, free to journalism students with faculty approval. Faculty and staff can search as well. Contact Bob Stevens. I haven't listed everything available on campus, but this should show the journalist that these sources do exist here. Most students don't even know we have them. (For the complete list, see Judy Pallardy's booklet "Computer-Based Information Services Located in the Libraries of the University of Missouri-Columbia," available from the General Reference Desk of Ellis Library.

This guide focuses on the education database ERIC more than any other database. It's possible to use ERIC online, for example through Dialog, Knowledge Index or BRS/After Dark, but we don't have to. We can avoid both the expense of online searching and much of the expertise required by searching it on CD ROM at Ellis Library.

ONDISC--CD ROM

Some of the more frequently-used databases, such as ERIC, have been captured on compact disc (ERIC is on three discs, covering information published 1966 to present). Known as Compact Disc--Read Only Memory, or CD ROM, these discs usually contain the same information of its online counterpart.

The discs are similar to an audio CD that has the latest from the Outfield or the Fine Young Cannibals. Instead of storing sound, however, the discs hold information--about 250,000 pages. The information is stored as pits in the three-mile-long groove in the disc, and is read by a laser beam. In the book *CD ROM: The New Papyrus*, Leonard Laub shows why CD ROMs are becoming a common sight in information-intensive environments: "If you have a lot of text to distribute, such as a law library, one CD ROM disc, costing $10 or less from the disc maker, stores as much material as microfiche costing $150 to make or books costing $1000 to print. Further economies come in handling, warehousing, and shipping." (6) And in terms of database searching, if you can get the library or the media organization to pay the start-up and subscription cost, you pay nothing to use them. The biggest drawback to you and I is that ondisc information is often a bit older than online information. Manufacturing time often sets the CD ROM 3-6 months behind the online version of the database.

The Engineering Library has the Applied Science and Technology database. Ellis has ABI/INFORM, specializing in business and business-related concerns (publishing included, as well references to *Training and Development* journal, which is full of service journalism articles for the workplace); Agricola covers agriculture and related subjects, and PsycLit, the field of psychology. InfoTrac, probably our most commonly used system, is similar to the Reader's Guide to Periodical Literature; it's an incredibly wide-ranging database of hundreds of magazines, journals and newspapers. (7) Also, the Law School has InfoTrac's LegalTrac.

Ellis Library's ERIC on CD ROM is manufactured by Silverplatter. By searching it you can find information related to education--teaching, learning, school administration, a wide variety of children's issues. It also covers information science, so you can learn more about database searching, if you wish. ERIC can be very useful to the aspiring journalist, especially one working on writing assignments in a university town. Of the three ERIC discs we have, dating back to 1966, the most current disc, 1983-1989 (as of this printing) is usually the most useful. It contains 165,589 records, from journal articles, speeches, pamphlets, research reports, dissertations, etc.

Out of those 165,589 citations, surely there are a few you can use for your day care article. And if you can't find them in ERIC, you can go to another database, and another. A vendor like Dialog has around 200 databases, and five or ten will be worth searching for this topic. Let's talk now about what to do with the information when you get it.

Reasons to use database searching

- To develop leads
- To get background information for interviews
- For fact checking after interviews
- For additional information
- To analyze trends
- To locate "movers and shakers" to interview

Figure 2

Serendipity Searching:

Disseminating useful knowledge
In an age of information

It's easy to get references to 200 articles... But you usually don't want 200 references. How about one good one? Or five or ten good ones?

The goal of service journalism is to give people an action plan. The "service" you provide is one of knowledge dissemination, information the reader/listener/viewer can start using immediately, whether it's how to find a good day care center, how to grow a better garden, or how to get along at work. As you've seen up to now, there's no shortage of knowledge for you to disseminate.(8)

However, wanton dissemination on your part could lead to Toffler's information overload. Professor Byron Scott quotes broadcast analyst Eric Severeid as saying "We live amid an answer explosion... [Communication] has developed more answers than we can match up with reasonable questions." (9)

That's true for the writer as well as the audience. You can find thousands of answers, and for most of them you won't have corresponding questions, since the action plan you're building needs to be specific. Both online and on CD ROM, it's easy to get references and summaries to 200 articles (200 "answers") by typing a few words and pressing 'enter.' But you usually don't want 200 references. How about one good one? Or five or ten good ones?

The thing that makes database searching interesting is phrasing a search that will hook those 20 sources you can use and dump the 180 that you can't. You become a gatekeeper in the same way you would if you had to decide which news stories to choose for your publication or broadcast. Figure 3 lists a few things to keep in mind.

A good search can usually be done in five or six steps, each of which is fairly easy. You'll find them in the next section. Before we go through those steps, let's talk about your general approach.

In the book *CD ROM: The New Papyrus*, Mark Heyer discusses three different ways to search for information: grazing, browsing and hunting. (10) Knowing when to engage in each will help your search.

WHEN TO GRAZE

Heyer's example of grazing is performed by "the person who sits in front of the television hour after hour, a passive recipient of the evening's programming." I guess you could call it "Couch Potatoing." It's difficult to graze in a database, since you have to press buttons once in awhile to make it work. Grazing is not practical when you have deadlines to meet, since you don't have a goal in mind. It's good for learning how to use the system, though.

This brings us back to the benifits of CD ROM searching--you can take all the time you want (although Ellis Library stipulates that you have to sign up for no more than one hour at a time).

WHEN TO BROWSE

When you want to build your knowledge base, or if you want to brainstorm for ideas, search in the browsing mode. Here you don't need a concise approach, you take all the time you want or need; speed is not necessary. Have you heard the expression "If you don't know where you're going, you'll probably never get there?" That's not necessarily true here. If you have an idea of what you're looking for, you may be able to find it by browsing. On ERIC, you can type in a word or two about your topic, and read the summaries for 150-200 records in 30 minutes. By that time, you may have a better idea of what you need to find.

Most experienced online searchers don't browse. For one thing, their enriched knowledge base allows them to focus precisely and get specific answers to the specific questions they have. Another reason they don't browse is this: since browsing takes time, it can be too expensive to do online. Again, CD ROM comes to the rescue.

WHEN TO HUNT

Online searchers are usually in the hunting mode, where the time factor is critical--it's what you do under deadline. In database searching, hunting requires a tight focus, and sometimes sophisticated background knowledge. Hunting of the household variety may result when you remember a good article published in your favorite magazine last year. You find a use for it, and so you go through all the magazines in your closet looking for that specific article. (Your hunt may turn into a browse when you say "Oh! This was a good issue," and you find yourself in the same spot 30 minutes later, sitting in the closet, without the article you began looking for.)

Although hunting saves time, there's a chance that your aim will be too narrow, that you might miss something important you hadn't thought of. To find the best answers, ones that you can match up with reasonable questions, be open to the possibility that you can find things by chance in unexpected places. It's called serendipity--the ability to make accidental discoveries that pay off. You can preserve the serendipity factor if you alternate between hunting and browsing, and even grazing, once in awhile.

Guidelines for Gatekeeping

- Get something you can bounce off your human sources
- Find sources thatdiscuss ideas proven through trial and error (some databases have special designations for how-to articles)
- Use popular magazine articles for background, but don't use them as "digested" answers. (Sometimes the authors are talking off the cuff. Read the articles, but don't base your credibility on facts that can't be backed up)
- Be open to accidental discoveries--serendipity

Figure 3

Search Tips:

Principles of searching

Computers search for sequences of letters, so it's better not *to type phrases or sentences.*

While each database has unique features, and often unique operating commands, there are a few things about searching that remains the same. The following can be generalized and applied to most systems. (An application of these steps executed on Ellis Library's ERIC on CD ROM can be found in Appendix B.)

DESIGN A SEARCH STATEMENT

Before you sit down at the computer, it's a good idea to write a one-sentence explanation of what you're looking for. From this you can develop a search strategy, the specific steps you plan to take. (See Figure 3) Start with your normal pre-writing process, determining your focus, asking yourself questions about what you need to know. Use your knowledge and past experience (and possibly your editor) to formulate questions you would normally ask to write the story. From here, two factors will determine how you create the database search strategy: how much you already know about the subject and how you urgently you want the information.

How much you already know about the subject may determine how much thought you need to put into your search statement. What you ask for is generally what you get back, and that is not always an advantage, as we'll find out later in the section entitled "Practice the High Art of Interactivity." A lot of Ellis Library's online searching is done by librarians. Because of their knowledge of the subject area and of the search system, they have a background from which to draw their search strategies. If you're having trouble, they can bring the questions into sharp focus. The second aspect of forming a search strategy is determining how you want to go about looking for it. Are you ready to hunt, or should you browse awhile to get a feel for the subject?

I will assume in this guide that you're under deadline and that you're in the hunting mode. Therefore, you will need to make your search as focused as possible. Define your search statement, what you're looking for, and confine it to one or two sentences. Then use the main words in your search strategy to find keywords from the thesaurus.

USE KEY WORDS (WHEN POSSIBLE)

Now take the main (operative) words from your search statement and match them with key words (keywords), also known as descriptor terms, from the database thesaurus. It's usually near the ERIC workstation.

What appears to be the most direct method of searching is the least efficient. If you were interviewing a person, you'd ask "What do you look for most in a day care center?" or "Does your child like it here?" Those questions would be manifestations of your search statement. But since the computer searches for sequences of letters, you can't type those questions into the computer. It searches letter-by-letter, and doesn't understand concepts. You have to put your question into language the computer understands.

When I searched for ways to do better in school, I typed *improving memory*. That seems pretty direct, but I didn't find anything I could use. Later, I looked in the thesaurus and found learning strategies, which the computer could do something with, and I got a much better response. The yellow book near the ERIC workstations is its thesaurus. It gives general information about how the system works, and then lists the keywords. Every word you type in does not have to be from the thesaurus, but their efficiency can't be denied. If you search without them, the computer won't lock up, and it won't give you an error message. It will give an answer, but it may not be the complete answer, or an accurate answer.

So after you have decided on your topic, and created a search statement, look for words that will reach that direction in the database thesaurus.

Sometimes a thesaurus won't be available. In that case there are other options, such as *truncation* and *proximity searching*.

If you truncate the word *improving*, like this: *Improv**, the machine will look for *improve, improves, improving, improved*, any word that begins with i-m-p-r-o-v. For a proximity search, you need a Boolean operator.

USE PROXIMITY AND BOOLEAN OPERATORS

In this search we could say *improv* near5 memory*. *Near5* is a proximity operator used in Ellis's ERIC system to mean "within five words." (These operating commands vary from system to system. For example, on our business database ABI/Inform, you would say *improv# pre/5 memory*. If you're still curious about why I said it would be simpler not to include operating commands in this paper, see Appendix C now. Since you don't have to memorize them to use the systems, there's no need to fret about them.)

More common *Boolean operators* are *and* and *or*. They're all you need

The search statement: four examples

- Trama and its relationship to adolescent suicide; esp. stress injury
- Implications of occupational status on political participation; voting, political clubs
- The early history of television
- (For day care) Costs and quality of day care, the education provided

Figure 3

You can weed out false drops, *unwanted records, by finding a few good records,* hits, *and looking for others like them.*

Boolean Operators

These are the most common:

and

day care and cost

(for records that contain both)

or

day care or child care

(for records that contain either or both.

Figure 4

most of the time. (*With* and *not* are less commonly used.) "Once you know the Boolean operators," says Bob Stevens of the *Missourian* morgue, "you know 90 percent of database searching." By using *and* to combine terms and *or* to add synonyms to the search, you add a dimension to the search not possible with reference-book searching.

Boolean operators can be used, for example, when you want information about the cost of day care. If you were to type in "The cost of day care," the computer would give you an inaccurate response. Instead, try keywords and Boolean terms, like this: *daycare and (cost or price).*

LIMIT SEARCH FIELDS

Figure 5 shows a few of the fields in the ERIC system. All the information in the record is broken up into fields: the author in the author field, the title in the title field. The descriptors are in the descriptor field (sometimes they're called 'terms').

In the Vu/Text database, the headline is a field, the lead is a field, the newspaper name is a field, etc. If you ask for day care in the lead of the story, there's a good chance that day care is a main focus of the article.

When you have a thesaurus, the most useful field is the descriptor field. On ERIC, when you say *daycare in dem*, you're restricting the response to daycare as a main subject of the article (a Main Descriptor).

ERIC has another feature that cuts through the jumble. The Office of Educational Research and Improvement provides funding for a series of short reports called ERIC Digests, where researchers review and summarize literature inside and outside of the ERIC database. When I was doing research on listening, I typed in *eric digest in ti* (in the title), and came back with 330 records. I combined this with *listening in dem* with the word *and*, and found exactly what I was looking for, an report entitled "Listening: Are We Teaching It, and If So, How?" It summarized the important ERIC articles on listening and teaching how to listen. In less than five minutes I discovered 19 references to works on listening with this two-page survey of the field. This is an example of a "back door" in a database, where someone else has already done the work. That's my kind of research.

Appendix C shows several ways to narrow your search, by narrowing the fields, in several different systems.

When you have turned your search statement into a search strategy, executed it, and found a pool of articles to look through, you can go on to the next step, interactivity.

PRACTICE THE HIGH ART OF INTERACTIVITY

Telling the computer *daycare near5 cost* might be the same as telling a friend *movie near5 tonight*. And your friend says "Huh?" In database searching, you have to reduce your question to an abstraction for the machine to understand you; you have to throw out the inflections. Therefore, when you get a response from the computer, you'll get things you can use and things you can't. The unwanted records that sneak in to every search are called *false drops*. You can weed many of them out, by finding a few records that are similar to what you want, called *hits*, and looking for others like them.

Danny Hillis of the MIT Media Lab sees computers doing this themselves some day.

> The one [record, in this case] you've got says "Here's what I'm like," and everybody looks at that and says "How much am I like that?" and then they order themselves with the order of how much they are like the other article...

The searcher then looks through the reordered batch, and says

> "Oh, yes: that's what I meant; that's what I meant; that's not what I meant. Now do it again on the basis of that knowledge." (11)

This kind of technology isn't common yet, but it seems to be on the way.

How to narrow the fields on ERIC* (optional)
If you want a tight focus, use these:

Day care in ti	The words day care must appear in the title of the record
py=1989	To get information published in 1989
py=1987-1989	To get recent information
day care in de	'de' stands for descriptor term; when you find one of the terms in the thesaurus that hits your topic, ask for it in the descriptor field--it will narrow the response, kicking out "false drops."
day care in dem	Pulls back only records where day care is the main focus of the article.

Figure 5 ** See Appendix C for field searching in systems other than Silverplatter's ERIC on CD ROM*

When you know one system, it's much easier to learn others. The basic ideas don't change, just the way you express them.

BRS is working on a command they call "link" that searches multiple files for records that are similar to the one you like (12), and Nexis has a command to "search all files."

But for now you'll have to do it yourself. Reading from start to finish the first 200 records you get (possibly a 45-minute task) is not interactivity. Reading the first 20, or reading all 200 titles, is a good start. Then once you get an idea of what's there, you can start adding the inflections you took out, reducing the chance of information overload. Here's the short course in interactivity for Ellis's ERIC on CD ROM (one of many different methods):

1) Do a search like the one in Appendix B, using keywords and Boolean operators. When you get the search narrowed to 100 or 150 records (if you get fewer, that's fine), take a look at them. View only the titles the first round, by specifying that you want to show the title field, using the command options on the bottem of the screen.

2) Use the pencil and paper near the machine to write down the number of good titles; each is listed on the right side of the screen, above the title. For example, 7 of 76 means the seventh article out of a total of 76 articles. If you like it, write down a 7 and go on. You may find none or only a few you like, or you may like all of them, or you may not have enough information to make a decision.

3) When you reach the end of the titles, go back and look at the whole record for number 7 and the rest that sounded interesting.

4) Print out the ones you like, using the commands on the screen.

5) Go through the printed records, and ask yourself what makes them worthy candidates for your research. Why is this record useful? The best place to look on ERIC is the descriptor field (DE), where the keywords are. In database searching, the descriptors play a very important role, that of classifying concepts and ideas with very small units of language.

6) Go back to the search screen (again using the command prompts on the screen) and play around with what you found. For example, possible additions to the day care search could include a new emphasis on corporate sponsorship.

The more you interact, the better your information will be (and the less you will have to print out, which makes the library happy). However, I realize that some online searchers reading these words may be gritting their teeth. It may seem expensive or unnecessary to stop everything and look at what you've got. Or it might be compared to opening your new package of cookies in the middle of the grocery store parking lot. Stephen P. Harter says in his text *Online Information Retrieval: Concepts, Principles, and Techniques*, that "...[if the results of most of this research are accepted at face value,] it can be concluded that many searches involve little or no modification of search formulations, or, indeed, little interaction with the search system of any other kind." (13) Perhaps this is because many of their searches are done outside the presence of the person who requested the information, and it's hard to know exactly what the person needs. When you're the boss, feel free to throw out the undesirables.

Still, some people type in one word and then want to print out 300 records, the recipe for information overload. Most of the 300 are inevitably "false drops," and it isn't hard to reduce the number to 25 or less.

The only reason for you to spend an evening reading records is if you are perusing the entire field for ideas--when you're browsing. Hunters need to catch their prey and get on to other things, and that's possible through interactivity.

It is also possible to interact between databases. You could run the day care search in the CD ROM business database, ABI/Inform. You might even find something in the psychology database.

In the next few years, if you come across ERIC again, if it's not on CD ROM, it will probably be on one of the big online systems, like Dialog, Nexis/Lexis, BRS, WilsonLine or Vu/Text. Each database vender has a different method of operation. While ERIC on one system is usually exactly the same as ERIC on any other system, retrieving the information will differ slightly. And each database is different; not all of them use *de* for the key words and *py* for publication year. But once you know the principles of one system, it's much easier to learn the others, since the basic ideas don't change, just the way you express it. (Caveat: significant differences do exist, if you look hard enough. If you're searching a database that stores molecular compounds, most of these techniques don't apply. I've only seen one search that fits this catagory; they're rare, and it would be especially rare for a journalist to have to do one without the guidance of a specialist.)

Conclusion

The search for coherence

Providing your audience with strings of undigested facts, thrown together unanalyzed, is unquestionably "Disservice Journalism."

Communicators such as yourself have the power to translate, to throw data into new configurations, pulling together this expert and that expert, information from here and there, to solve problems. This is especially true in service journalism. But we should be careful. Providing your audience with strings of undigested facts, thrown together unanalyzed, is unquestionably a disservice. It's "disservice journalism." Even though database searching provides answers, they need to be the right answers, helpful answers. Vartan Gregorian, former head of the New York Public Library, has said that many people

> ...want ready-made answers, made by others. As Sheridan said in his 1799 play, [one of his characters, a critic, said] they 'don't want to undergo the fatigue of judging for themselves.' We're abdicating our right to think, our right to explore. (14)

The purpose of this guide is to make it easier for you to do your article, not to do it for you. When you find quality information, you have to digest it and mold it into an action plan. Make it coherent for your audience.

You can probably get along without database searching for a few more years, if you wish. Journalism will continue to exist, whether or not journalists use information retrieval. But it seems there will come a time when it will be a major component of our work as disseminators of knowledge.

Overall, while database searching localizes the information age and makes your job more efficient, no one can say precisely how it will affect your future in journalism. Its market is still being tested.

Even though it has many possibilities, there are still detractors, as the great Socrates fought against the study of books. Having the great ideas recorded so you could sit down and read them wasn't important to him. The High Arts were discussion and examination. (15) In the 16th century A.D., the idea of progress was a fatter cow, in the 18th it was mass production. As you join the Future Shock World, the Third Wave, the Information Age, whether or not you call it progress, information retrival is here, and it will be here, for a long time to come.

FOR MORE INFORMATION

If you are, like myself, an Infomaniac, you might like more information about the knowledge industry. I've provided a few references in the End Notes to help you along, with MU call numbers if we have them.

To keep up with the latest, searchers attend seminars and read vendor newsletters. They also read trade publications like *Information Today, Online, Online Review, Database Searcher* and *Database*. Recent issues of these trade publications are located in the Current Periodicals Reading Room of Ellis Library.

More hardware-intensive magazines are *MacWorld, Mac Week, MacUser, PC Week, PC*, and others, that you'll find on newsstands.

End Notes

If the following materials are available at MU libraries, call numbers are listed.

1. If you'd like a pure process approach (operating commands only) to the ERIC database in Ellis Library, one is available. It was written by Robert Huffman, and can be found in the ERIC microfiche drawers, first floor of the library (1 South), under ED 284 759.

2. The first public, online database was offered by Dialog in 1972. For a historical timeline, see "Online Database Industry Timeline," by Charles T. Meadow, in *Database*, October, 1988, Vol. 11, no. 5. At this printing it was located in the Current Periodicals Reading Room of Ellis Library.

3. For a sample of the myriad of databases in existence, see Cuadra/Elsevier's *Directory of Online Databases* (1987), in room 156 (the LitQuest Room) of Ellis Library.

4. Remember hearing a few years ago that by now you'd be paying your bills by using a computer keyboard hooked to your television? Viewtron was one of these services, operated by Knight-Ridder. Its acceptance wasn't what they expected, and hopes for mass adoption are fading. Also, the fact that Knight-Ridder is involved in Dialog and Vu/Text implies an attempt to sell their information more than once, first as news, then as research.

5. Weinberger, Marvin J. and Howitt, Doran. Inc. Magazine's *Databasics: Your Guide to Online Business Information*. New York: Garland Publishing, Inc. 1984. p. 326. Formerly used as a textbook in UMC's Information Science 305, Access to Electronic Information, a course for non-Library Science students--when I took it, there was one non-Journalism student.

6. *CD ROM: The New Papyrus*, ed. by Steve Lambert and Su zanne Ropiequet. Redmond, Washington: MicroSoft Press, 1986. This particular reference was to Leonard Laub's "What is CD ROM?", p. 48. JOUR TK 7882. C56 .N49 1986.

7. InfoTrack is owned by Information Access Company, which is an interesting study for media people. The list of databases they produce is impressive: Area Business Databank, The Computer Database, Industry Data Source, Legal Resource Index, Magazine ASAP, Magazine Index, Management Contents, National Newspaper Index, NewsSearch, Newswire ASAP, Trade and Industry Index. IAC is also affiliated with Ziff-Davis Communications, which publishes computer-oriented magazines, such as *MacUser* and *PC*.

8. If you're interested in ways to increase the effectiveness of the knowledge you disseminate, read *Planning for Innovation Through Dissemination and Utilization of Knowledge*, by Ronald G. Havelock, et. al. Center for Research on Utilization of Scientific Knowledge, Institute for Social Research, The University of Michigan, Ann Arbor. P 91. H39, also JOUR P91. H39.

9. Scott, Byron T. "Service Journalism: Toward a Heuristic Agen-da. A Speculative Paper," presented to the Association for Education in Journalism and Mass Communication. Spring 1987.

10. *CD ROM: The New Papyrus*. Same as #6. This piece, by Mark Heyer, is entitled "The Creative Challenge of CD ROM, " p. 347

11. Brand, Stewart, *The Media Lab: Inventing the Future at MIT*. New York: Penguin Books, 1987. JOUR T 171. M49 .B73 1987. If you've read it, here's two updates: 1) The Connection Machine, developed by Hillis for Thinking Machines Corp., is now used by one of Dow Jones News/Retrieval's services. See "DowQuest Enables Users to Search in Plain English," *Information Today*, July/August 1989, Volume 6, Issue 7. 2) An update on the "Personal Newspaper": Chase Manhattan Bank now has a system that "reads" the wire services and pulls out articles of (pre-programmed) interest. *New York Times*, June 6, 1989, "Computers that Read and Analyze."

12. *Information Today*, June 1989, Vol. 6, Issue 6, "New LINK Command on BRS," p. 4. This is one dimension of the LINK command. Also, in the same edition, page 25, there's an advertisement for Social Science Citation Index on CD ROM with a similar device, a hypertext feature called "Related Records."

13. Stephen P. Harter, *Online Information Retrieval: Concepts, Principles, and Techniques*. Orlando: Academic Press, 1986. QA 76. .55 .H37 1986. A text used by UMC database searching classes.

14. Vartan Gregorian, former head of New York Public Library, now at Brown University. From "World of Ideas," with Bill Moyers, broadcast 8/13/89.

15. Schramm, Wilbur, *The Story of Human Communi cation: Cave Painting to Microchip*. New York: Harper and Row, 1988. JOUR P 90. S382 1988. From page 80: "...Blunt, plainspoken Socrates made fun of book learning just when, for the first time, books were becoming cheap and plentiful and his countrymen were beginning to fill them with poems, drama, history, and philosophy that, 1700 years later, printers, scholars, and librarians were seeking out as the finest in Western Cul ture." It's ironic that a person so intent on enlightening people would neglect the scholarship of the future. But we wouldn't let him.

Appendix A:

When *to* use computer searching, when *not* to

There are times when using computer searching is the best way to get information. And since students at UMC can use CD ROM databases at no cost, you won't be out any money for trying them. Here, reprinted for your amuzement from page two, are good reasons to use database searching:

- To develop leads for your story (brainstorming) If you have a name or a concept and you want to see-what's been written about it
- To get background information for interviews.
- For fact-checking after interviews
- For additional information, if you see an angle not covered by your original sources. Maybe with a little extra information, you can put together a sidebar.
- To analyze trends, to see what's being talked about, what people are concerned about
- To locate "movers and shakers" to interview. If a name comes up several times, you can search for that name to see how many times they are men tioned. Maybe it's someone you should contact.

But to say that database searching is always the best way to get information is naive, even for someone as 'hip' to it as myself. Sometimes it is better to use research tools other than the computers, at least while you are in Columbia with our comprehensive libraries.

Two books you might find helpful are *Knowing Where to Look*, by Lois Horowitz, and *The Reporter's Handbook: An Investigator's Guide to Documents and Techniques*, by the Investigative Reporters and Editors, Inc.

And it doesn't hurt to talk to librarians, who will be able to tell you, for example, that the U.S. Bureau of Labor Statistics publishes excellent statistical data, and that *Current Biography* or the *Who's Who* series both cover biographical information well. Also:

- When a reference book covers your topic specifically, use the book. If you're doing a story about local aviators and you want to know about small planes, you might find more of what you're looking for in *Jane's All the World's Aircraft*, which you could find on LUMIN, the online card catalog for the University of Missouri Libraries. Librarians can tell you the best approach.
- It's important to pick the correct database. If you're topic is very specific, and falls outside the scope of the databases you search, you may get the impression that nothing has been written about your topic. This may not be the case. A special-interest group might be happy to help you. Ask a librarian for Gale's *Encyclopedia of Associations* or similar references.
- Maybe you'll know enough to write the article without human or paper back-up. This is true forsome types of service journalism articles.
- Maybe a local expert can answer all your questions.
- Some online services can be extremely expensive. If you have to pay for the search, and you can't find it through Knowlege Index, BRS/After Dark, or a similar lower-cost vendor, maybe you can find another way that may take more time but cost less. Researchers have gotten along for many years without computers.
- Much in Columbia revolves around the Universi ty. Some of your human sources may be professors, and they may give you an author's name and invite you to look at the book for more information. The best place to find books owned by the library is LUMIN.
- Has anyone ever said to you: "You know, I came across something like this in *Newsweek* last month. If you're interested in the newest research perhaps that would explain it." If you have the date of issue, or if you're within a few issues, you might be able to find it in the Journalism Library or in Ellis, without consulting the computers. If the

Appendix B:

A sample search: picking a day care center

This is a strategy for ERIC on CD ROM, by Silverplatter. Some of these commands don't work on other systems. You can learn more about the search language and operating commands used here (such as *dem* and *py*) in Appendix C.

Make a search statement:

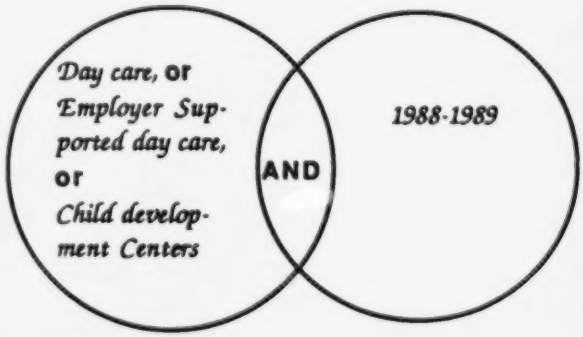
I want current information about day care centers, how to pick a good one. Cost is important, and the educational activities provided. Corporate day care sounds interesting, too.

Choose the operative words

Current
cost
corporate day care
Day Care
educational activities

Look for descriptor terms in Thesaurus (if one is available)

Imagine Boolean Connectors



Create strategy statements using the language appropriate to the system. (Here, Ellis Library's ERIC on CD ROM system)

Employer supported day care in dem
py=1988-1989
Child development centers in dem

Type in your strategy. Here's one way:

```
Silverplatter v1.5                    ERIC (1/83 - 3/89)
No.      Request                          Records
#1   day care in dem                        1059
#2   py=1988-1989                          15496
#3   #1 and #2                              127
```

I asked the machine to show the titles. I found title numbers 4,6,7,11,24 to be what I'm looking for, so I printed out those entire records. Looking at the print-out, I saw in the descriptor field (DE) something I should probably look at, and so I searched for it when I was done looking at #3 above:

```
#4   employer supported day care in dem
                                          78
```

These were good, too. I printed a few before going on. Next,

```
#5   Child development centers
     in dem                               16
```

Looked at titles. Not much here.

[ ] – What you type

Interact, by scrutinizing the records you like. What makes them good? And how can you exploit it?

In this search I discovered several records of interest, including an article from *PTA Today* entitled "Finding the Right After-School Care for Your Child" and "Results of the Child Care Challenge on Employer-Sponsored Child Care Services" from *Young Children*. After you have some references to work with, you'll probably want to read the original source (ERIC is a bibliographic database--it doesn't have the full-text.) You can see if we have the journals at UMC by checking the indexes by the ERIC workstation. The UMC Libraries don't own all of the journals in the ERIC database, but I can usually find what I need. Some of the ERIC information will be on microfiche, in which case we will have it, in drawers on 1 South, not far from the work station.

NOTE: I used *dem* in this search. It can be more restrictive than saying *day care in de*, so if *dem* doesn't work, try *de*. And if *de* doesn't work, try *day care* by itself. Or you could ask for *day care in ti*, or...there are many other ways.

Appendix C

This comparison of Ellis Library's CD ROM databases illustrates the diversity of operating commands--each system is a little bit different. LUMIN, the online card catalog, is useful, but is excluded from this discussion. The two online vendors included below, Knowledge Index and BRS/After Dark, each have ERIC, along with around 80 other databases. Where can you find these databases? See contents page.

THE SYSTEM	Function/ Specialty See End Note #4 for more detail	Form of Information	Field Searching Different ways to search; as you become more experienced, you may wish to try these alternatives.
ERIC on CD ROM from the Educational Resource Information Center, in Ellis Library on a disc by the Silverplatter Company. Free.	Learning, education, school and children's issues; Also effects of media Information Science	1) Journals from CIJE, Current Index to Journals in Education 2) Documents from RIE, Resources in Education Summaries are included.	*Searching by:* Descriptors from Thesaurus: day care in de Author, best done through index, using F5 key Words in title: daycare in ti Institution of author(s): Carnegie Institute in cs Specific Journal: Music-Educator in jn Clearing House (subject heading): CH=HE (Where HE stands for Higher Education--see thesaurus for full list of subject headings) Document Type Number: DTN=50 (Where 50 stands for teaching guides. Usually restricts search to RIE. See thesaurus for more) Publication Year: py=1988
ERIC online: on both BRS/After Dark and Knowledge Index, two low-cost vendors available through Ellis Library for $2.50 per 5-minute time period.	Same information as ERIC on CD ROM (but the commands to search ERIC here are different.) This is included for comparison only; there's usually no reason to go online if we have all the information on CD ROM.	Same as ERIC above.	**KNOWLEDGE INDEX** Each search must be preceded by *f*, for *find*. Notice also use of the slash. For example, *f daycare/ti*, or *f day care/de/ti* Specific Journal: *jn=music educator* **BRS/AFTER DARK** No *f* needed. Periods are used instead of slashes: *day care.de* For specific journal: *Music Educator.so* (For Source)
ABI/INFORM on CD ROM from UMI-Data Courier, in Ellis Library on a disc by UMI. Free.	Business, incl. management, economics, accounting, specific industries, Publishing/B-cast included	Over 800 business journals, selectively chosen Summaries included	Words in title: ti(daycare) Specific Journal: jo(Forbes) Terms(same as ERIC's *descriptors*, from ABI thesaurus): te(training) Specific Company: co(Wal Mart) Classification Code: cd(8690) (Where 8690 stands for publishing industry--see thesaurus for more) Publication Year: py(1988) Author: au(peters)
PsycLit on CD ROM from the American Psychological Association, in Ellis Library on a disc by the Silverplatter Company. Free.	Covers these aspects of Psychology: experimental, counseling, social, applied, developmental Has case studies, research reports, etc.	Over 1400 journals, in 29 different languages Summaries included	Descriptors--same as in ERIC, but use PsycLit thesaurus. You can also look for authors, publication year and narrow the search to certain journals with the codes used in ERIC. Classification Codes: similar to ABI/Inform, but use PsycLit thesaurus. Type CC=2343 for learning and memory. For Management and Management Training: cc=3640. For words in Key Phrase: daycare in KP (KP is like a second, more complete title.)
InfoTrac on CD ROM From the Information Access Company, in Ellis Library on discs by IAC. Free.	Two Systems: 1) Popular-press and scholarly publications, incl. magazines, journals, newspapers, and 2) National Newspaper Index. Amazingly broad coverage.	General-interest and specialist magazines, journals, newspapers. Unlike the above systems, InfoTrac has NO summaries.	NONE. Unlike the above systems, InfoTrac is a one-concept searching system; type in one concept at a time. Searches by subject. Probably the easiest system to use.